

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inv ntor(s): Leary et al.

Serial No.: TBA

Examiner: TBA

Filing Date: October 17, 2003

Group Art Unit: 0

Titl : TUNNEL-JUNCTION STRUCTURE INCORPORATING N-TYPE LAYER COMPRISING NITROGEN AND A GROUP VI DOPANT

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

This Information Disclosure Statement is submitted:

- (a) ☒ Under 37 CFR 1.97(b).
(Within three months of filing national application; or date of entry of national application; or before mailing date of first Office action on the merits; whichever occurs last).
- (b) ☐ Under 37 CFR 1.97(c) together with *either* a:
☐ Statement under CFR 1.97(e), or
☐ \$180.00 fee under 37 CFR 1.17(p).
(After the CFR 1.97(b) time period, but before a final action or notice of allowance, whichever occurs first).
- (c) ☐ Under 37 CFR 1.97(d) together with: a
Statement under 37 CFR 1.97(e), *and*
\$180.00 fee as set forth in 37 CFR 1.17(p).
(After a final action or notice of allowance, whichever occurs first, but before payment of the issue fee).

☐ STATEMENT UNDER 37 CFR 1.97(e)

The undersigned certifies that:

☐ Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the statement, *or*
☐ No item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, was known to any individual designated in 37 CFR § 1.56(c) more than three months prior to the filing of the Information Disclosure Statement.

☐ PRIOR APPLICATIONS

References identified with an asterisk (*) in the enclosed PTO Form 1449, were disclosed in prior Patent Application No. _____, filed _____, now U.S. Patent No. _____, and, as such, copies thereof are not included pursuant to the provisions of 37 CFR 1.98(d).

☐ FOREIGN LANGUAGE DOCUMENTS

A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO form 1449, as presently understood by the individual(s) designated in 37 CFR 1.56(c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on form PTO 1449 and is enclosed herewith.

☐ **FEE AUTHORIZATION**

Please charge to Deposit Account **50-1078** the sum of _____. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **50-1078** pursuant to 37 CFR 1.25.

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☐ I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below.


Date of Facsimile:

Typed Name: Michael Laird

Signature: 

Respectfully submitted,
NEEDLE & ROSENBERG, P.C.

By


Michael J. Tempel
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Reg. No. 41,344

Date: October 17, 2003

Telephone No. 678-420-9300

Form PTO-1449 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTORNEY DOCKET NO. 10021234-1	SERIAL NO. TBA
	APPLICANT Leary <i>et al.</i>	
	FILING DATE October 17, 2003	GROUP TBA

REFERENCE DESIGNATION		U.S. PATENT DOCUMENTS		
EXAMINER INITIAL	*	DOCUMENT NUMBER	DATE	NAME

FOREIGN PATENT DOCUMENTS						
		DOCUMENT NUMBER	DATE	NAME	TRANSLATION YES NO	

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)		
	AA	R. Shau <i>et al.</i> , Vertical-cavity Surface-emitting Laser Diodes at 1.55 - μ m With Large Output Power and High Operation Temperature, <i>Electronics Letters</i> , October 11, 2001, Vol. 37 No. 21 (1295)
	BB	S. Nakagawa <i>et al.</i> , 1.55- μ m InP-Lattice-Matched VCSELs With AlGaAsSb-A1AsSb DBRs, <i>IEEE Journal on Selected Topics in Quantum Electronics</i> , Vol. 7, No. 2, March/April 2001, 224-230
	CC	Chao-Kun Lin <i>et al.</i> High Temperature Continuous-Wave Operation of 1.3-1.55 - μ m VCSELs With InP/Air-Gap DBRs
	DD	J. J. Wierer, <i>et al.</i> , Lateral Electron Current Operation of Vertical Cavity Surface Emitting Lasers With Buried Tunnel Contact Hole Sources, <i>Appl. Phys. Lett.</i> , Vol. 71, No. 24, December 15, 1997, 3468-3470
	EE	K. D. Choquette, <i>et al.</i> , Room Temperature Continuous Wave InGaAsN Quantum Well Vertical-Cavity Lasers Emitting at 1.3 μ m, <i>Electronics Letters</i> , August 3, 2000, Vol. 36, No. 16, 1388-1390
	FF	K. M. Yu, <i>et al.</i> , Nitrogen-Induced Increase of the Maximum Electron Concentration in Group III-N-V Alloys, <i>The American Physical Society</i> , Physical Review B, Vol. 61, Number 20, May 15, 2000, 337-340
	GG	K. M. Yu, <i>et al.</i> , Mutual Passivation of Electrically Active and Isovalent Impurities, <i>Nature Publishing Group</i> , Advance Online Publication, 1-5
	HH	W. Shan, <i>et al.</i> , Effect of Nitrogen on the Electronic Band Structure of Group III-N-V Alloys, <i>The American Physical Society</i> , Physical Review B, Vol. 62, Number 7, August 15, 2000.
	II	K. M. Yu, <i>et al.</i> , Mutual Passivation of Group IV Donors and Nitrogen in Diluted GaN _x As _{1-x} Alloys

EXAMINER	DATE CONSIDERED
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* C p i s f these r f renc s are n t n c l sed Pursuant t 37 CFR 1.98(d). (See acc mpanying IDS)